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Image inpainting with modified f-transform

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Abstract

© Springer International Publishing Switzerland 2015. Restoring damaged images is an important problem in image processing and has been studied for applications such as inpainting missing regions, art restoration. In this work, we consider a modified (fuzzy transform) F-transform for restoration of damages such as holes, scratches. By utilizing weights calculated from known image regions using local variance from patches, we modify the classical F-transform to handle the missing regions effectively with edge preservation and local smoothness. Comparison with interpolation - nearest neighbor, bilinear and modern inpainting - Navier - Stokes, fast-marching methods illustrate that by using our proposed modified F-transform we obtain better results.

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Keywords

Approximation, Fuzzy transform, Image inpainting, Interpolation, Local variance